

**Support for the Establishment of Effectively Managed MPA Platform
Sites as Foundations for Resilient Networks of Functionally-Connected
Marine Protected Areas**

Raja Ampat Islands, Papua Province, Indonesia

Annual project report (October 2005-September 2006)



Islands in Kofiau



Karst islands in South East Misool

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**The Nature Conservancy Indonesia Program
Coral Triangle Center**



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Project Background

The Raja Ampat islands encompass over 4 million hectares of land and sea off the Northwestern tip of Papua in Indonesia, forming the center of the “Coral Triangle”, the area of the world’s highest marine biodiversity. The islands are located at the Northeastern entrance of the Indonesian Throughflow from the Pacific to the Indian Ocean, thus occupying an important position upstream of many other high biodiversity marine areas in the Coral Triangle. During a recent expert’s workshop, the Raja Ampat area with Cenderawasih Bay was identified as a single functional seascape, the Bird’s Head. Conservation International and TNC conducted Rapid Ecological Assessments of the Raja Ampat area in 2001 and 2002.

The archipelago is estimated to harbor over 75% of world’s known coral species. A total of 488 scleractinian corals were identified during TNC’s Rapid Ecological Assessment. In addition, at least a further 35 species are awaiting identification in consultation with reference collections. Of these, 13 are expected to be new to science. This compares to 445 species in North Sulawesi, 379 species in Milne Bay and 347 in Kimbe Bay, PNG. Including results from CI’s survey in 2001, this brings the total number of species confirmed for Raja Ampat to at least 537 scleractinian species of coral. Soft coral diversity is also very high. At least 41 of the 90 Alcyonacean genera known worldwide were recorded during TNC’s REA.

The Raja Ampat islands have one of the world’s richest coral reef fish faunas, consisting of at least 1,074 species of which 899 (84%) were observed or collected during TNC’s REA. Allen (2002) reported 970 species from this area during CI’s REA. TNC’s REA resulted in 104 new records for the Raja Ampat islands, including four new records for Indonesia. This is the third highest count for any similar-sized location, being surpassed only by Milne Bay Province, PNG (1,109 species) and Maumere Bay, Flores, Indonesia (1,111 species). However, the Milne Bay and Maumere data is based on long-term surveys, featuring more intense research effort. It is expected that if a similar amount of research effort were applied to Raja Ampat, this area would surpass Milne Bay and Maumere Bay in terms of reef fish diversity.

TNC’s REA concluded that conservation of marine biodiversity in the area is an overriding priority and of major interest to the global community. Four areas of overriding conservation value and opportunity were identified: the islands of eastern and southern Misool, Kofiau, Sayang and Pulau Ai, and the Wayag islands.

Overall, reefs in Raja Ampat are in very good health. Reefs do not appear to be suffering from any recent serious detrimental effects. Up to now, there is no obvious evidence of the bleaching events that caused extensive mortality to reefs in the region in 1998. There is no evidence of current or recent Crown-of-Thorns starfish outbreaks or other coralivorous impacts. There was very little sediment and pollution impact. However, blast fishing and fishing with poison is still common, and the fish communities of the reefs of Raja Ampat have been negatively impacted by over-exploitation, especially of the larger carnivores (sharks and groupers). Through cascading effects in the food web, over-exploitation may eventually lead to a decrease in overall coral reef health, for instance through a more frequent incidence of Crown-of-Thorns starfish outbreaks.

The Raja Ampat area is huge, the islands and reefs are widely dispersed, and population density is low. These features, which provide conservation opportunities, also allow easy access and exploitation by non-residents. The unregulated access to local resources leaves residents feeling powerless and disenfranchised, and encourages them also to take what they can get before others pillage the resources that are still there.

Hence, the newly formed Raja Ampat District needs effective resource use management that conserves biodiversity while benefiting local communities. Achieving this objective requires the establishment of a multi-use network of Marine Protected Areas that is well-embedded in local and national legislation, and that is co-managed by local communities and local government agencies. Because of ecological considerations, the footprint of the network must comprise the complete Bird's Head functional seascape. One of the ecological considerations is that Cenderawasih Bay may "seed" the reefs in Raja Ampat through the prevailing East-West current. Cenderawasih Bay is Indonesia's largest marine national park, as well as one of WWF Indonesia's project sites.

TNC's program in Raja Ampat focuses on establishing in the western part of the Bird's Head a network of MPAs that mediates the threats of unsustainable extractive resource use, providing benefits in terms of conservation protection as well as in terms of commercial benefits from sustainable resource use. The design of the network will include criteria pertaining to resilience to bleaching and over-exploitation. Although other major threats identified by the World Resources Institute's *Reefs at Risk* assessment (coastal development, pollution, siltation through logging and other un-wise land uses) are not as pervasive as destructive fishing and over-fishing, they may still pose threats to localities within the Raja Ampat archipelago. Therefore, these threats will be explicitly considered in the design of the network as well as in site management plans.

TNC's strategy for establishing an MPA network in Raja Ampat is to create an enabling framework with local communities, district and national government agencies and scientists. Establishing this enabling framework requires initiatives that focus on design (using TNC's Conservation by Design approach and Conservation Action Planning tool) as well as policy. Integration of biodiversity protection and sustainable resource use considerations into the District's spatial plan is essential. Parallel to furthering this enabling framework, TNC will help create MPAs at two sites within the Raja Ampat archipelago. While these two sites will provide tangible benefits in terms of conservation of biodiversity and sustainable resource use, they will also provide a basis for development of a more comprehensive network that covers the Raja Ampat archipelago and the rest of the Bird's Head functional seascape.

Overall Assessment of Progress and Management Issues

- Local people and government agreement on the establishment of MPA in Kofiau
- Outreach program in Kofiau has created awareness among local people about the marine conservation issues and resulted in support for establishment of an MPA in Kofiau.
- MPA design through workshop, baseline data and consultation with local people.
- A joint patrol is going to be established. Local community has agreed on the implementation of the joint patrol
- One TNC field site established. Another site has been selected and a new field station is to be built.

Objective 1: Local policy support and development of a coalition for marine conservation and MPA management

Activity 1.1: *Engage local district, regency, and provincial government agencies in establishment of MPAs and link local government agencies to national agencies and policies*

Results Anticipated in FY06:

- A local regulation, with background information outlined in an academic draft (*Naskah Akademik*) that provides a clear legal framework for establishing MPAs and that refers to national and provincial laws
- Clear designation on which agencies and other groups are responsible for management of MPAs at the local government level

In FY 06, the TNC-CTC Raja Ampat program has made progress on improving the understanding and support from the local government and stakeholders on Raja Ampat marine conservation and MPA establishment. This has been achieved through workshops and consultation meetings with CI, Papua Customary Council (*Dewan Adat Papua*) and the Raja Ampat Government.

The first strategy of TNC was to have a dialogue with local government agencies about MPA establishment, primarily in Kofiau. A number of discussions were conducted with Raja Ampat technical agencies, notably Planning Bureau (Bappeda) and Marine and Fishery department (DKP), to include Kofiau islands as protected areas in Raja Ampat Regency's development plan, budgeting, and spatial planning.

In March 2006 our team participated in a meeting on "*Rencana Pembangunan Jangka Panjang (RPJP) Daerah*" (Long-term Regional Development Planning) and "*Rencana Pembangunan Jangka Menengah (RJPM) Daerah*" (Mid-term Regional Development Planning) in Waisai. In this meeting, the government requested TNC to contribute in the development of the Regency's spatial and development planning.

In May 2006 we conducted a follow up discussion of the spatial planning meeting with the Raja Ampat government. Seventeen regulations were addressed. Among these was our proposal to establish MPAs in Kofiau received widespread support from the government.

TNC also joined BKSDA Papua to participate in the Forestry Department's program exposition in September 2005 featuring conservation in Raja Ampat. A similar central government exposition was also conducted in March 2006 by the Department of Marine Affairs and Fisheries (DKP), where we presented findings on the biodiversity of Raja Ampat to the general public.

Together with CI, TNC facilitated a workshop in August 2006 to discuss Raja Ampat Marine Joint Patrol development, Kofiau Marine Protected Areas establishment, and marine tourism development with the Raja Ampat local government. The objectives of the workshop were

- to achieve a common perception and understanding on MPAs that will be established in Raja Ampat, and the statutory process for creating MPAs in Kofiau;
- to obtain a formal endorsement from the Raja Ampat government for a joint patrol program, and to determine the role of the Raja Ampat government in designing and implementing the joint patrol; and
- to achieve a common perception about marine tourism, and the regulation process for marine tourism development in Raja Ampat.

As a result of the workshop, the Raja Ampat government supports the process of establishing an MPA in Kofiau. Formal declaration of a MPA in Kofiau, a new TNC site in Misool, and four MPAs in Waigeo being supported by CI is expected in December 2006. The Raja Ampat government also supports developing the joint patrol, which will also be officially launched in December 2006. In addition, TNC and CI will assist the Raja Ampat government to initiate development of regulations on marine tourism, particularly a tourism user-fee system in Raja Ampat.



Meeting with Raja Ampat Government on MPA, Marine Joint Patrol and Marine Tourism, facilitated by TNC and CI.

TNC also worked closely with the local media such as local newspapers, radio stations (RRI and El Marko) and collaboratively published news on TNC-CTC programs and marine conservation efforts in Raja Ampat, MPA design, and stakeholder involvement.

Activity 1.2: *Engage local community groups in design of mechanisms to establish MPAs, linking with Locally-Managed Marine Areas network*

Results Anticipated in FY06:

- Documented involvement of Regional Traditional Leaders Council Sorong and Ma'ya clan (*Dewan Adat Wilayah Sorong dan Suku Ma'ya*) in the design of mechanisms to establish MPAs.
- Documented mechanisms to involve, consult, and socialize the local communities in the establishment and management of MPAs. These mechanism will be documented in the local regulation or law on MPA establishment.

TNC facilitated discussions and meetings in March 2006 with Eastern Indonesian Locally-Managed-Marine-Areas in Jayapura. This meeting resulted in exchanging working area's condition and information, experiences, and lessons learned on techniques and methods of LMMAs' implementation and benefits. TNC will implement field activities for LMMAs in the first quarter of FY07 in Kofiau and later on in Misool.

During the third quarter of FY06, TNC completed two main activities prior to implementing Participatory Rural Appraisal (PRA). The first activity was community based data collection and the second was conservation champions training. The purpose of the champion training was to build local communities' capacity to engage in the PRA implementation, and also to increase the knowledge of local communities about their natural environment. The participants were prepared to become conservation champions for marine conservation efforts in Kofiau. The emphasis of the activity was directed towards the knowledge on the benefits of MPAs for sustainable fisheries. Thirteen community members—three local people from each village, four staff from Kofiau District, and one teacher from a local junior high school—participated.

After the training, all of the participants engaged in PRA data collection on population dynamics, interrelation of institutions, livelihoods, seasons, and trends versus changes within communities in Kofiau. Data obtained was particularly important for delineation of MPA boundaries, zoning division, population information, livelihoods, and area management by the local government. The final product of PRA will be printed and submitted to village and district governments and also Raja Ampat's planning bureau.



**Discussion with Papuan Customary Council
on Marine Conservation**

TNC-CTC maintained and strengthened its partnership with *Dewan Adat* (Papuan Custom Council) through regular communications and consultation. A major focus of the consultation was aimed at acquiring communities' perceptions and customary information in relation to MPA establishment, zoning, and the development of a marine patrol system in Raja Ampat. Two formal and informal meetings were conducted. The effort resulted in *Dewan Adat's* role to facilitate community workshops in February 2006 pertaining to the development of marine joint patrol system in Raja Ampat.

TNC-CTC conducted a district workshop with stakeholders in Kofiau for the purpose of establishing Kofiau MPA. This workshop was a culmination of a series of previous community meetings conducted in Kofiau. Thirty-eight (38) prominent representatives from various groups in Kofiau participated. Major groups involved were village, church, traditional/custom, women, youth leaders, District's head and staff, and TNC. Results obtained were:

- Serious concern from the entire Raja Ampat community about threats caused by illegal activities (blast fishing, over-fishing, and cyanide) on marine resources in Raja Ampat and Kofiau.
- All community leaders agreed to establish a MPA in Kofiau and enact effective enforcement/patrol system to protect biodiversity and Kofiau's marine environment.
- All participants signed a Community Agreement on MPA Establishment in Kofiau.
- All agreed to declare an MPA in Kofiau by the end of May 2006.
- Some representatives met the Raja Ampat Regency to propose MPA establishment in Kofiau. The effort resulted in the government's endorsement to produce a decree for Kofiau MPA in December 2006.

Prior to the District Workshop on Kofiau MPA, TNC facilitated two meetings with church leaders in December 2005 to discuss a revitalization effort of traditional practice on marine conservation called "*Sasi*" in Kofiau District. This resulted in the Kofiau communities' commitment to lobby various church groups to endorse and implement *sasi* in Kofiau and probably the entire Raja Ampat islands.



Outreach Team discuss with local people on the traditional system of resource use

management in Kofiau, called “Sasi”

Activity 1.3: *Strengthen “Forum Bersama Membangun Raja Ampat (Forbes)” as a vehicle for policy support and stakeholder engagement*

Results Anticipated in FY06:

- Capacity of Forum will be identified and necessary training programs and/or other support to strengthen *Forbes* documented and implemented.
- A one year work plan for *Forbes* will be developed to guide the forum in achieving the agreed upon goals and objectives for this year.

Members of *Forbes* were involved in technical training by participating in an MPA training facilitated by TNC-CTC in Sorong, November 2005.

TNC, CI, and *Forbes* also conducted a one day meeting that resulted in a decision to improve *Forbes* management mechanism. In the meeting, *Forbes* decided to restructure the organization to improve its effectiveness to function as a vehicle for policy support and stakeholders engagement in Raja Ampat. Coordination meetings between these three institutions have been conducted at least once a month throughout FY06.

TNC and CI conducted a meeting to review and evaluate *Forbes*’ work plan in June 2006. The meeting resulted in the reformation of *Forbes*’ management body and work plan. Therefore, the effort to support *Forbes* meetings by covering the costs and its members for local transport and lunch could not be conducted and will be carried over to FY07.



FORBES Meeting

Activity 1.4: *Strengthen strategic partnership with WWF, CI, COREMAP and UNIPA*

Results Anticipated in FY06:

- Efficiency of the conservation coalition greatly enhanced.
- Policy-makers receive consistent messages on required policy actions from TNC and CI.

- Coherent UNIPA support for the establishment of MPAs network in Raja Ampat through their active involvement in the marine conservation program. Students and staff involved in the program will have clear work plan, duties, and evaluation system.
- TNC and DKP (COREMAP II) implement at least one joint activity in the platform site to support marine conservation and or on-site conservation program.

To strengthen the partnership between TNC and CI in order to implement effective conservation programs in Raja Ampat, both conducted a coordination meeting at the TNC-CTC Bali office. Topics discussed included: perception of conservation programs and issues in Raja Ampat, strategic planning and efforts to combine forces in marine conservation, and strengthening partnerships between the two organizations. More specifically, the coordination meeting addressed:

- *Communication/outreach/education*
 - TNC, CI, COREMAP, and Raja Ampat district would conduct a joint publication called “Tabloid Raja Ampat” as a medium to inform local communities in Raja Ampat and nearby regencies in West Papua about conservation efforts in Raja Ampat.
- *Governance and Policy*
 - TNC and CI would share primary and secondary data on good government efforts, policies and regulations generated for Raja Ampat regency. TNC-CTC would support the implementation of economic valuation of natural resources in Raja Ampat.
- *Community Development*
 - TNC and CI would share results of surveys and research on community development programs. The coordination would be maintained through regular meetings between the two organizations.
- *Monitoring, Surveillance and MPA*
 - TNC and CI would work together to implement monitoring and surveillance programs in Raja Ampat.



TNC-CI Coordination meeting

UNIPA staff participated in the monitoring workshop conducted by TNC in December 2005. The UNIPA representative was expected to be involved in future monitoring activities in Raja Ampat. A discussion with UNIPA’s Rector, Deans, and teaching staff was conducted to strengthen mutual collaborative efforts in

implementing research, field work, and conservation programs in Papua. UNIPA sent eight students to be involved as interviewers in the Perception Monitoring survey in July-August 2006.

Objective 2: Technical support for network design, site selection and MPA delineation

Activity 2.1: *Finalize field work for baseline surveys on resource status, resource use, and (local) resource use management*

Results Anticipated in FY06:

- Final report on baseline survey (also known as Coastal Rural Appraisal, CRA).
- Report with profiles on each of the villages in Kofiau.
- Database with observations from the baseline survey. These deliverables will be used by TNC SEACMPA's Science Team to design Marine Protected Area networks based on various sets of criteria.

TNC monitoring teams, along with local community representatives, conducted SPAG surveys around Kofiau. The team surveyed 12 suspected SPAGS during new and full moon, but so far none of the SPAGS are confirmed. It appears that these SPAGS have already been fished out by local fishers who work together with local and regional traders. Nevertheless, the team will continue to monitor these SPAGS, while interviewing local fishers to identify other SPAGS that may still exist. An expedition to the remote Ayau atoll in the north of Raja Ampat is planned for November to confirm the existence of a suspected SPAG that may still exist.



TNC monitoring staff interviewed local fisher on the baseline survey.

TNC, along with representatives from local communities and other key stakeholders, also carried out marine resource use monitoring. The monitoring in Kofiau covered around 157 nautical miles within 2 days. Until now, five instances of monitoring (sorties) in Kofiau sites have been completed. Important findings of the resource use monitoring in Kofiau is that illegal and destructive fishing practices was performed by non-Raja Ampat fishermen. These fishermen come from Sorong (Papua main land), Sulawesi and Maluku.

Activity 2.2: *Involve local government agencies and communities in the design of MPA networks*

Results Anticipated in FY06:

- Government buy-in for a process towards a blueprint of an MPA network by the local government / BAPPEDA and by community groups and partners

With the goal of involving local government agencies and communities in the design of MPA network, TNC carried out training on MPA network design and reef resilience for TNC-CTC Raja Ampat field staff and stakeholders on 8 – 10 November 2005. Fifteen attendees participated in the training. The aim of this training was to deliver knowledge on MPA design and management. Topics covered in this training included marine biodiversity in Southeast Asia, the concept of MPAs, principles of fisheries management, MPA benefit for fisheries, species conservation, tourism, stakeholder engagement, marine conservation modules overview and situational analysis.



TNC staff discuss with the local people on the MPA design.

Various formal and informal consultation meetings were conducted with relevant government agencies, local government, and executives discussing MPA establishment. An important piece of progress from the various meetings was in the form of an agreement to produce legal status for the proposed MPA in Kofiau by the Raja Ampat government. The Head of Kabupaten Raja Ampat plans to declare the MPA in December 2006.

Activity 2.3: *Provide feedback on logistical constraints and field realities for the selection of one additional field site where SEACMPA (now CTC) will establish field presence*

Results Anticipated in FY06:

- One additional site selected

TNC has established a site in Kofiau and established an office at the site to support the field activities. The office has been completed with jetty, fuel storage, electrical generator and other operational and field activity equipment.

For a Misool site, observations on available infrastructure and support systems were completed in June 2006. A village in Southeast Misool, Harapan Jaya, is proposed for a field office site. The land owner, the head of village, the head of BAPERKAM, key persons (religious and *adat* leaders), and Sub-District government representatives have committed a piece of land that can be used by TNC for ten years. A contract and construction plan to build the office has been prepared.

In July 2006, TNC facilitated a meeting with key Misool leaders to explain the TNC program, to solicit feedback on the program, and to get support for the establishment of Southeast Misool field office in Harapan Jaya. The meeting was attended by key/*adat* people from both the “Matlol” and “Matbat” ethnic groups, who reside in Sorong (*adat*, church, youth, and women leaders). As a result of the meeting, these community leaders fully support establishment by TNC of an office in Harapan Jaya.

Activity 2.4: *Conduct field work for research projects related to the CI/TNC/WWF Packard Ecosystem-Based Management research project*

Results Anticipated in FY06:

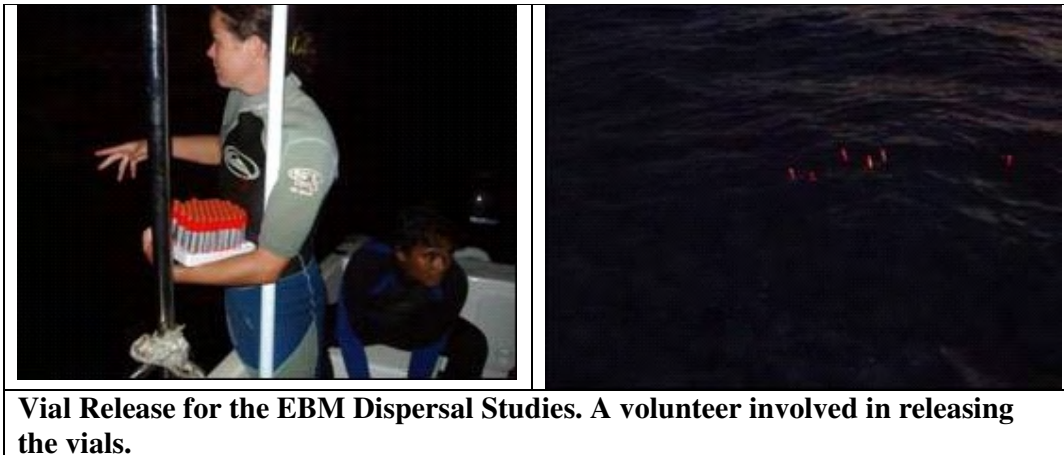
- A comprehensive ecosystem based scientific data of Bird’s Head Eco-regions will be produced and made available for the governments within the Bird’s Head seascape to be utilized in each regency’s spatial planning and area development schemes.

TNC, together with CI and WWF, launched a two year Ecosystem-Based Management program for the Bird’s Head Seascape, which includes Raja Ampat. The project has 15 research components categorized into four groups of studies: ecosystem, governance, socio-economic impact studies, and synthesis. The research will produce recommendations in the form of models of ecosystem-based management to support sustainable development in Bird’s Head seascape.

A draft protocol for biomass assessments has been developed during the monitoring workshop in Kofiau. Three different functional groups of coral reef fish, including herbivorous Parrotfish of the family *Scaridae*, surgeonfish of the family *Acanthuridae*, as well as larger carnivorous fish such as groupers, jacks, snappers, etc. were targets for biomass assessment. Size (length) and estimation training was conducted underwater using wooden fish. Along with biomass assessment, a protocol for coral health monitoring has also been developed. The assessment was scheduled on 19 – 25 June 2006 and would be conducted simultaneously with SPAGs survey, resource utilization survey and reef health monitoring.

The TNC assisted CI with the installation of temperature loggers in Walo and Mangi-Mangi islands in Kofiau. The loggers record the fluctuation of water temperatures in order to find out the effect of sea temperature rise to coral reefs in the area. Current activity is reef and pelagic fish stomach sampling to analyze food types consumed.

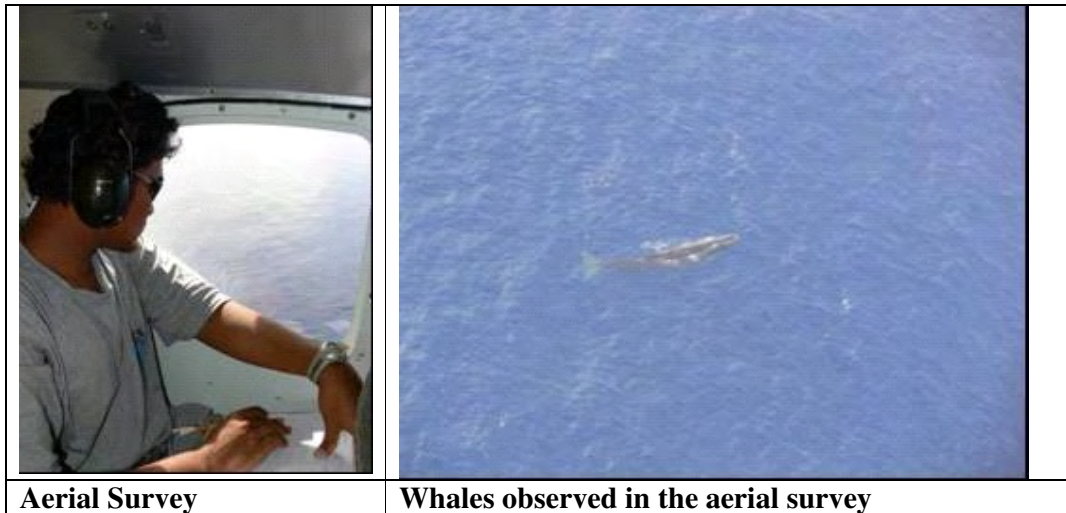
One thousand vials were released in Gebe Besar Island in Kofiau on 15 March 2006. The aim of this simulation was to trace the dispersion of eggs and larvae from the suspected SPAGs following sea currents to determine seascapes. A total of 189 vials were found by the fishermen in scattered places through the entire Raja Ampat. Most of the vials, around 179, were found on the Northern portion of Misool. During May, one vial was found around Reni island (Ayau district) that is located North of Waigeo Island. Four vials were found in Batanta strait, and five additional vials were found in the South East of Kofiau Island.



Release of a second batch of vials is planned to be conducted after SPAGs in Ayau have been identified. A joint TNC and CI monitoring team plan to visit and interview fishermen in Ayau in November 2006. Suspected sites will be examined by visual observation using SCUBA.

TNC, CI and Raja Ampat Fisheries Office conducted five days of aerial surveys of fisheries, coastal habitats and large marine fauna in Raja Ampat islands on 9 - 13 January 2006. Using a Pilatus Porter aircraft, the survey team completed a flight path of 2,200 nautical miles (4,070 km) in 10 trips of 3 hours each. The team recorded *ca.* 1000 features, and took *ca.* 3500 pictures and 5 hours of video. Further, the survey team mapped coastal habitats such as reefs, mangroves, sea-grass beds, and estuaries, and additionally discovered 5 “marine lakes” which will soon be explored. Fishing vessels, even small canoes, were easily spotted from the plane. The team also noted that some areas appeared to be too rough for fishing. The team did not observe blast fishing, and only one hookah compressor operation was encountered. The team also spotted whales, hundreds of dolphins, dugongs and manta rays. An interactive map that contains all pictures made during the survey has also been integrated into the data base. This survey was repeated in September 2006.

In addition to aerial survey expedition, the monitoring team conducted resource use monitoring in Kofiau employing developed protocol from the monitoring workshop last December. Findings of the monitoring confirmed that illegal fishing practices are still taking place in Kofiau. A follow up survey was done in mid June 2006.



Activity 2.5: *On-site conservation: conservation area planning*

Results Anticipated in FY06:

- Local inputs for the design of a mandated and formalized management authority
- A comprehensive report on data on high-resolution resource status, resource use and resource management in the waters around Kofiau.
- Plan to develop a financing strategy for management of the Kofiau MPA as well as the MPA network.

The first part of the planning program was the initiation of the design of a local management authority (including local government agencies and local community groups). In order to accomplish this, first a series of community meetings were held on village and sub-district levels in Kofiau. In April 2006, a consensus to establish a MPA in Kofiau was produced by various representatives. There is a strong motivation from the communities to engage and take parts in the establishment process and management of MPA in Kofiau.

TNC then increased its effort of engaging and consulting government agencies in Raja Ampat to achieve a legal designation of the proposed Kofiau MPA through a decree and eventually through an enactment of the regulation. A workshop to discuss Kofiau MPA establishment with the local and national government have been planned for December 2006. Government technical agencies, i.e. Raja Ampat planning bureau (Bappeda) and Marine and Fishery Office (DKP), Forestry Department (PHKA) and the Department of Marine and Fishery (DKP Pusat), were involved in the process. A consultation meeting on the establishment of a MPA with relevant government institutions was held in August 2006. The meeting was attended by the Head (Bupati) of Raja Ampat. A consensus to formally establish the MPA in Kofiau was achieved.

In the last coordination meeting on the proposed MPA, TNC has promoted the idea of a collaborative management. formalized as a new management body. A milestone of this activity will be in the form of an established management authority for the MPA in Kofiau and Misool. The formulation of this institution will be initiated after the formal endorsement of the MPA by the government.

In order to train the TNC-CTC team and stakeholders about resource management, TNC has conducted a series of MPA/Network Design Workshops. The first three workshops were held in Komodo National Park, Raja Ampat, Derawan, and the upcoming last workshop was held in Wakatobi National Park in September 2006. TNC and joint project staffs, DKP & BKSDA staffs have been involved. The objectives of the workshops are to:

- Identify processes, challenges and data required to design a network of MPAs.
- Introduce the concept of coral resilience.
- Scrutinize conservation approaches and share experiences to assist in designing MPA zoning and MPA networks.



MPA design workshop for the conservation area planning.

In the MPA/Network design workshops, the participants shared progress and key findings made over the past three months among various sites within TNC programs, to discuss and to analyze/interpret the findings, and to build resilience into MPA design. TNC-Raja Ampat is now in the process of improving the MPA/Network design draft as a result of the last workshop, integrating it with the current situation in Kofiau. All this will be discussed in the upcoming last workshop which to be held in Wakatobi in September 2006.

TNC will consult the final draft of Kofiau MPA design with stakeholders after the MPA is formally established by December 2006. The end result is expected to guide the formulation of a zoning plan into an established MPA.

TNC will initiate the management plan of Kofiau MPA after the legal status of the Kofiau MPA has been established. It is expected by the end of 2006, after which the draft management plan can be disseminated. The consultation processes with local groups of the Kofiau management plan will include:

- Conducting community meetings in Kofiau.
- Meetings with government agencies, NGOs, and other relevant parties in Sorong.
- A workshop and/or meetings with all the relevant stakeholders.

The financing strategy for the Kofiau MPA remains to be developed. The requirements of financing strategy of the potential Kofiau MPA will be presented during the consultation meeting on MPA with Raja Ampat government.

Objective 3: On-site Conservation: community outreach

Activity 3.1: *Implement campaign to create local awareness on issues pertaining to MPA management, biodiversity conservation, and sustainable resource use*

Results Anticipated in FY06:

- At least one fourth (1/4) of all local resource users in Kofiau have a basic understanding of marine conservation and of the conservation program that is being implemented (as indicated by perception monitoring).
- Progress towards a more favorable investment climate for ‘green’ businesses, e.g. a proposal for more efficient handling of live-aboard div tourism.

The outreach team launched community awareness campaigns and consultations using several developed tools such as documentary films, posters, and bulletin. Community engagement at field level has been strengthened through the application of a local-traditional approach called “*Buka Senat*” (informal meeting involving a small group of people to discuss various issues). This approach proved to be very effective for the field team to communicate conservation programs on sites and it is also a better way to acquire information and understanding on communities’ perceptions and expectations toward various conservation programs, activities, and institutions who implement the programs.

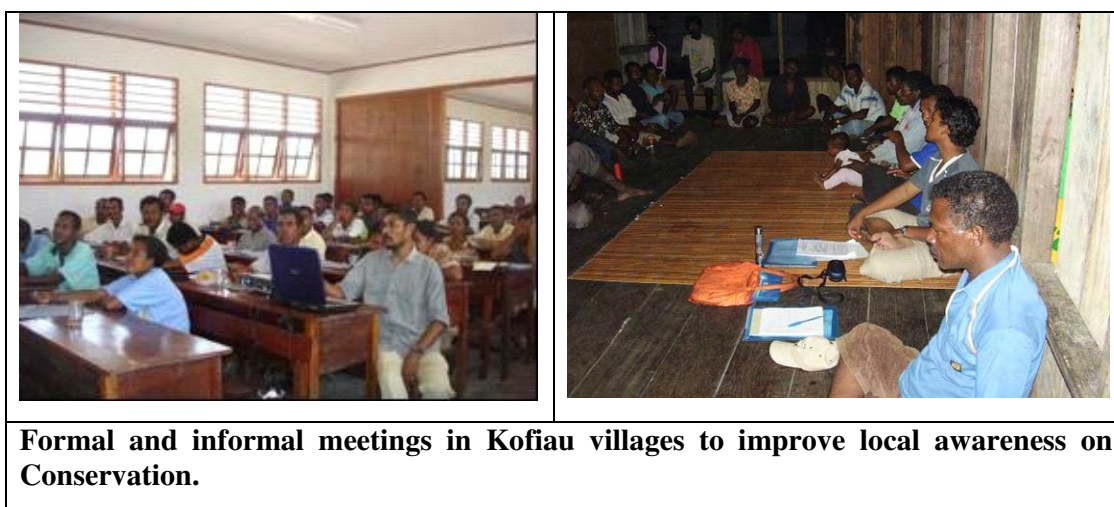
TNC produced and distributed outreach materials to relevant stakeholders. The materials consist of Rapid Ecological Assessments (REA) reports, calendar, and fact sheets. Through these materials, TNC has effectively communicated our programs and goals in Raja Ampat. TNC also produces quarterly bulletins containing conservation issues, relevant information about on-site conservation, and TNC-CTC Raja Ampat programs and activities. There have been three bulletins developed and distributed in Kofiau.

Other achievements of the activity include:

- Community support for MPA establishment in Kofiau. The meeting involved community groups: village government officials, tribe, religious, youth, women, and church groups. In addition to the support, various community groups in Deer signed an endorsement letter in support of marine conservation and MPA establishment in Kofiau.
- Basic management training for local community groups were held as part of capacity building efforts, particularly to provide them with better understanding in writing proposals (for small grant scheme) that are based on their real needs and potencies, financial reporting and project evaluation.



The outreach team has intensified its on-site activities covering sites in Kofiau and Southeast Misool. Routine community engagements and meetings as part of awareness campaign strategies were conducted. In addition to this, strategic consultations and communications were implemented, especially ones that geared towards the establishment of Kofiau MPA and the formation of patrol system in Raja Ampat. Formal and informal meetings were conducted involving various groups.



TNC has also taken actions to develop the skills of local leaders at Raja Ampat. TNC has identified twelve community members in Kofiau to be champions in delivering conservation messages to local people. These champions have engaged with TNC in Participatory Rural Appraisal (PRA) and outreach programs.

TNC conducted Speaking and Presentation Skills training in June 2006. Ten local people, three from each village and one from Kofiau sub-District government were trained. TNC also conducted MPA training in Sorong, in November 2005 that was attended by relevant stakeholders including one community leader from Kofiau.

The presence of TNC in Kofiau has attracted local people to support the conservation efforts in the area. Communities have been involved in several important marine conservation programs: identifying suspected fish Spawning Aggregation Sites (SPAGs), the development of SPAGs protocol, and various field observations. Tobias Dimara, a former hookah compressor fisher in Tolobi-Kofiau, has become a strong

conservation champion that has been actively promoting marine conservation programs in Kofiau, and we are publishing his stories in local newspapers.

Activity 3.2: *Implement ‘Training for Teachers’ workshops*

Results Anticipated in FY06:

- Materials offered during the teacher’s workshop become part of the schools’ curricula, as demonstrated through a follow-up survey
- One training offered to secondary school teachers, together with CI

The implementation of the training for junior-high-school teachers has been postponed due to a delay in the production of materials. The teacher training will be conducted in December 2006.

Activity 3.3: *Implement a small contracts scheme*

Results Anticipated in FY06:

- Community members implement at least 5 small-scale activities for each established MPA site that meet a local need, raise awareness about marine conservation and resource use, and build support for TNC Raja Ampat’s project activities.

TNC initiated the small grant scheme in Kofiau. Through this scheme, community groups are expected to implement activities that meet local need, raise awareness and support marine conservation projects.

In order to identify potential activities, TNC facilitated Proposal Writing Training which was conducted in Tolobi, Kofiau. Local officials, community groups, church leaders, women and youth groups from the three villages in Kofiau participated. Nine activities were proposed by various community groups, within the major categories: (a) beach clean-up, (b) mangrove reforestation, (c) garbage management, (d) crown of thorns clean-up, and (e) awareness programs. Every village will run at least three activities.

Each implementer signed a contract prior to implementing the proposed activities. TNC provided guidance and supervision to the entire groups in setting up activities’ datelines and schedule, report mechanism, and monitoring and evaluation.

The following summarizes progress under each activity:

Deer Village

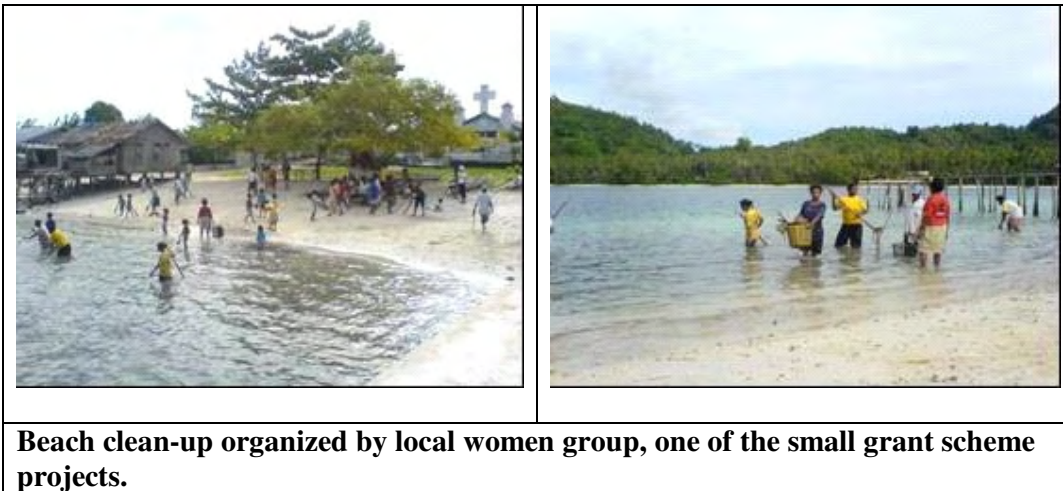
- a. Rubbish bin installation, run by a church organization, has achieved 75% (4 rubbish bins) of total number of rubbish bins that have to be installed.
- b. Beach clean up, which is conducted periodically by a women’s group, has achieved 25% or 3 months of total one year period.
- c. Reducing population of Crown of Thorn fish (COT), conducted by a youth group. They have caught 127 COTs around Dibalal and Kofiau islands.

Dibalal Village

- a. Mangrove Rehabilitation, conducted by a church organization, has achieved 55% or 550 mangroves planted of 1000 planned to be planted.
- b. Beach clean up and rubbish bin installation, conducted by a women's and youth group, has achieved 3 months beach clean up activity of one year project and 2 rubbish bins has been installed.
- c. Reducing population of Crown of Thorn fish (COT), conducted by a youth group has caught more than 100 COT.
- d. Environmental Information Boards Installation, conducted by a youth group, has achieved 1 of 3 boards.

Toloby Village

- a. Environmental Information Boards Installation, conducted by a church organization, has achieved 2 of 3 boards.
- b. Beach clean up, conducted by women's and teen groups, has completed 3 months activity of total one year period of project.
- c. Rubbish bin installation, conducted by a youth group, has achieved 100%; 12 rubbish bins have been installed.



Objective 4: On-site conservation: monitoring & patrolling for biodiversity

For overall monitoring support, TNC has involved CI, DKP (COREMAP), UNIPA and BKSDA in the monitoring workshop and invited qualified staff to join. It is expected that there will be collaboration in the implementation of monitoring program in Raja Ampat.



TNC, together with CI, conducted a joint workshop on monitoring on 7 – 20 December 2005. The participants of the workshop were TNC-CTC and CI program staff as well as relevant stakeholders including DKP, BKSDA, UNIPA and local community members from three villages of Kofiau. The goals of this workshop were:

- to train team and relevant stakeholders on how to carry out standard monitoring on SPAGs, resource use and coral health;
- to develop protocol and procedures of SPAGs, resource use, and coral health monitoring; and
- to build partnership with stakeholders on monitoring program in Raja Ampat.

As a result, specific protocol for each monitoring and location was produced and local people who will be engaged in monitoring activities were identified and trained. To train and support staff, TNC conducted dive training in Kofiau. The aim of this training was to enhance Raja Ampat field staff's diving skill. Five field staffs of Misool and Kofiau participated in the training. All participants have been certified as open water divers. TNC provided support for monitoring team including annual medical examination, dive insurance, dive equipment and dive compressor maintenance, and other dive skill improvement.

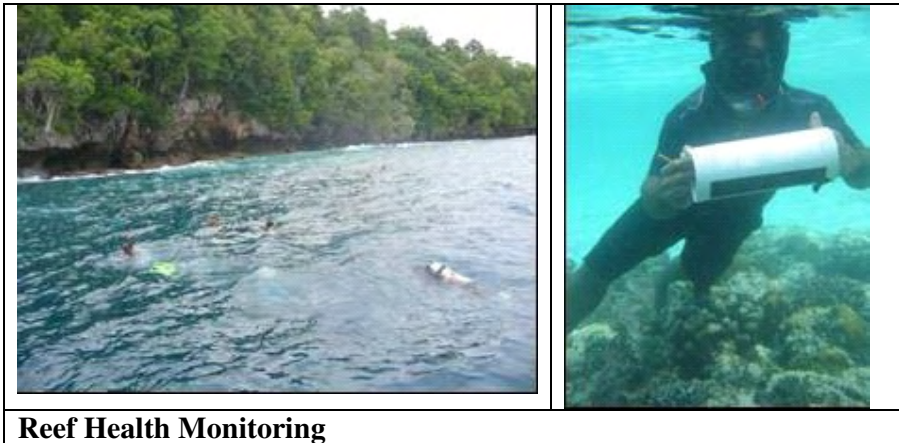
Activity 4.1: *Reef health monitoring*

Results Anticipated in FY06:

- Operational guidelines available for long-term monitoring program (reef health).
- Annual monitoring reports.
- Baseline data for the health of coral reefs, enabling the program to measure success in terms of increased coral coverage.

A team for reef health monitoring has been formed. The team consists of TNC monitoring staff and local people. TNC has developed a reef health monitoring protocol during a monitoring workshop, conducted in December 2005 in Kofiau. The TNC monitoring team has implemented the reef health monitoring in Kofiau. Fifty sites have been identified and mapped, including 20 sites in Northwest Misool. The

team has monitored 17 sites in Kofiau. They found coral bleaching in some places, caused by Crown of Thorn predation.



Activity 4.2: *Monitoring of spawning aggregation sites*

Results Anticipated in FY06:

- Operational guidelines available for long-term monitoring of spawning aggregation sites.
- Annual monitoring reports.
- Baseline data for the status of high-value fish stocks, enabling the program to measure success in terms of increased abundance of groupers.

A team for SPAGs monitoring has been formed. The team consists of TNC monitoring team and local people. The TNC-CTC Raja Ampat monitoring teams completed a series of SPAGs trainings, with the last one in Komodo. SPAGs identification procedures and techniques were introduced during the training. During a monitoring workshop in December 2005, the team developed fish models and conducted several exercises in fish length estimation. TNC-CTC developed a SPAGs Monitoring Protocol in the Monitoring Workshop, December 2005 in Kofiau. TNC installed transects with reef bars around Gebe Island as one of the SPAGs for regular observation. The monitoring team has been conducting underwater visual census of the SPAG in Gebe Island, which now seems depleted by the local fishery. The team also monitors 11 other suspected SPAGs.

Activity 4.3: *Collecting observations on Cetaceans, dugong, manta rays and coral bleaching*

Results Anticipated in FY06:

- Operational guidelines available for long-term cetacean, dugong, and manta rays observation program.

A TNC monitoring team has built an observation form for cetaceans, dugong, manta rays, and coral bleaching. The team has used this form to record sightings during field activities. TNC has also developed a protocol for occasional observation of cetaceans, dugong, manta rays and coral bleaching in the Monitoring Workshop in December 2005 in Kofiau.

Occasional observations on every boating activity have been implemented throughout the year to record the presence of dolphins and whales. The current observation in July and August 2006 found 46 dolphins, including a spotted dolphin.



Dolphins observed in the Occasional Observation

Activity 4.4: *Resource use monitoring*

Results Anticipated in FY06:

- Reports on resource use and relevant indicators that inform management (i.e. who is doing what, where, and when)
- A baseline to assess how resource use behavior will change as a consequence of new MPA regulations.

TNC formed a team for Resource Use Monitoring in a monitoring workshop. The team consists of TNC monitoring team, local people and local government officials. TNC has also developed a Resource Use Monitoring Protocol in the Monitoring Workshop in December 2005 in Kofiau. TNC implements marine resources use monitoring in Kofiau once a week. This activity is aimed to assess the use of marine resources by local communities and by other users from outside of Kofiau. Every single fisherman met during the trip is interviewed. The last survey found that illegal fishing practices were still taking place around Kofiau Island.



Resource Use Monitoring involving a local people to interview local fishers

Activity 4.5: *Perception monitoring*

Results Anticipated in FY06:

- Detection of a change in awareness level, which will help us understand whether the awareness program is effective.

TNC is monitoring trends in stakeholders' perceptions to inform decision-making on the management of marine conservation sites.

In April 2006, TNC carried out a workshop on perception monitoring for all TNC-CTC field sites to finalize the first monitoring report, review and evaluation of the first implementation and plan out the second monitoring survey. The results are:

- Final report of first round of perception monitoring
- Project guidelines and protocol for second round of perception monitoring.
- Schedule for second round of perception monitoring.

A perception monitoring team for the second round was formed in July 2006. This team consists of eleven independent interviewers including students from University of Papua, local university lecturers, community conservation volunteers, and local NGOs. After the recruitment, members of the team (interviewers) participated in a training-workshop to prepare them to do the field data collection. The objectives of this workshop were:

- To develop a protocol for the perception monitoring survey that is specific for Raja Ampat areas.
- To review the perception monitoring questionnaire in Raja Ampat context.
- To train interviewers regarding technical strategy for interview process.
- To pre-test and evaluate questionnaire before process of data collection.

The outputs of the workshop were:

- A perception monitoring protocol for Raja Ampat was developed.
- Household and individual questionnaires were reviewed and adapted to the Raja Ampat situation.
- Eleven interviewers were trained.

The second round of the perception monitoring survey was conducted in August and September 2006. This survey took place in 13 villages in Kofiau and Southeast Misool. The data collection has been completed in Kofiau, and the team continues to collect data in Southeast Misool.

The outputs of the survey are:

- Qualitative and quantitative data describing level of community awareness, attitudes and behavior toward environment, particularly marine resources use.
- Information and data about cultural and socio-economic factors.
- Information on resource management programs that may influence community attitude and behavior.

Activity 4.6: *Improve protection of biodiversity through timely and effective patrolling for biodiversity conservation*

Results Anticipated in FY06:

- Partnerships for patrolling are developed and formalized;
- Patrolling protocols and rules of engagement identified and agreed upon by the management authority, local stakeholders, and enforcement agencies;
- Implementation plan to carry out short-term actions.

In order to implement a patrol system in Raja Ampat marine areas, TNC, CI and COREMAP facilitated a workshop on illegal fishing with local institutions and stakeholders in Raja Ampat with three objectives:

- To be updated on illegal fishing practices and their threat to the ecosystem.
- To obtain lessons learned on the enforcement of illegal fishing practice from several institutions that have the authority and experience in policy, regulation and implementation on this issue.
- To create a team of stakeholders to prepare follow-up workshops in order to develop a joint patrol mechanism.

The workshop was held in Sorong on the 19 November 2005, involving 39 participants from relevant government institutions, NGOs and local people including leaders of Traditional Council. The workshop resulted in the following:

- A joint patrol is required to resolve problems of illegal fishing, particularly blast and cyanide fishing in Raja Ampat waters.
- A small team of stakeholders was formed to follow up the agreement made in this workshop and to prepare for a next workshop, as well as to follow-up activities to develop a protocol or standard operational procedure.
- A workshop on joint patrol will be held and its result will be shared with every village in Raja Ampat in order to get local input which will later be discussed in the final technical workshop.

TNC and CI facilitated a consultation meeting with Raja Ampat informal (traditional and religious) leaders to discuss and obtain opinions and sights pertaining to the joint patrol system which will be implemented in Raja Ampat marine areas. The results of the meeting were:

- Raja Ampat leaders agreed to implement the marine patrol.

- A community workshop was planned, in which every village representative will participate, to get input from local communities on the joint marine patrol.
- Input from local communities will be brought to the patrol technical workshop.
- Four teams consisting of informal leaders, TNC, and CI were formed to visit every village in Raja Ampat to socialize the plan to develop the patrol system.



Consultation meeting with Raja Ampat traditional and religious leaders to discuss and obtain opinions and sights pertaining to the joint patrol system.

TNC with CI conducted a Raja Ampat community workshop in February 2006 to gain community support on joint marine patrol in Raja Ampat. Two hundred and fifty participants, representing 88 villages in Raja Ampat, attended this workshop. The workshop was also attended by all the sub-district heads in Raja Ampat, Raja Ampat Regency Government, POLAIR (coast guard), Indonesian Navy and local media. The outcomes of this workshop were:

- Input was received from Raja Ampat communities on a joint patrol system that is suitable and acceptable within Raja Ampat. At the conclusion of the workshop, formal “Letter of Support” for the joint patrol program was signed by the 250 representatives from 88 villages.
- Inputs were obtained on viable models of joint patrols from the community that will be further developed through the next technical workshop.
- Community representatives were selected to participate in the technical workshop.

A common expectation of the representatives was to expedite the establishment of joint patrol teams, viable technical support, and protocols to support an immediate action in the field. The expectation was a result of communities’ concern over an increasing number of destructive fishing activities such as cyanide, bombing, and hookah compressor that have been occurring daily in Raja Ampat. The outreach team, together with the representatives from Kofiau district who attended the community workshop in Sorong, conducted a socialization of the workshop result in Kofiau. During the socialization process, local communities from three villages in Kofiau have shown enthusiasm to implement the joint patrol. They were eager for its immediate implementation, in order to stop destructive and illegal fishing in their

areas. Local communities have also raised the issue of implementing traditional law to prevent these practices. Finally, the local communities have committed to revive traditional law and make it into a local constitution at sub-district level.



Workshop on Illegal Fishing

A technical workshop, planned for October 2006, will be held with government agencies, CI, and local stakeholders, to bring together the local community and government conceptions on the marine patrol system in Raja Ampat to achieve an agreement on the patrol mechanism and procedures. TNC and CI are now preparing the draft of Standard Operational Procedure.

When the patrol system has been established, there will be a collaborative marine patrol which will be using a floating ranger station facilitated by TNC and CI. In some villages in Kofiau, as a result of the patrol workshop and its socialization, local people initiated community patrolling in July 2006 to prevent destructive fishing in their areas. TNC Raja Ampat helped this local initiative by providing fuel for the local boats used for community patrolling.



Local government and community involved in the patrolling trial.

Objective 5: Field Presence for SEACMPA Raja Ampat Program

Activity 5.1: *Finish and operate one field station in Kofiau, equipped with monitoring supplies (SCUBA gear) and Internet access (VSAT)*

Results Anticipated in FY06:

- One field office established and operational near the MPA site in Kofiau.

Two field stations in the area, with logistic/administrative support from Sorong and network communications, are vital to support conservation activities in Raja Ampat. This year's funding was used to refurbish the office structure in Kofiau. A second field station in Southeast Misool will be established employing similar approach as in Kofiau.

The first Raja Ampat field office has been established in Kofiau. This office features a wooden jetty equipped with fuel storage and electricity generator. It was inaugurated on 27 August 2005 through a traditional ceremony attended by sub-district government agencies, local tribal council leader, religious figures, community figures, and local communities from the three villages in Kofiau. The field station is equipped with monitoring supplies (SCUBA) and VSAT internet access.



Activity 5.2: *Operate administrative and logistical support desk in Sorong*

Results Anticipated in FY06:

- Effective administrative and logistic support for GCPII activities in Raja Ampat.

The Sorong office has played its role to plan, organize, coordinate, and maintain programs and activities in Raja Ampat.

Activity 5.3: *Purchase a vessel that will be refitted as a floating ranger station*

Results Anticipated in FY06:

- Floating ranger station sourced and purchased

After a one-year search for a suitable second-hand vessel that could be refitted as a Floating Ranger Station proved unsuccessful, the team finally decided to order a new

vessel from an artisanal shipyard in Bira, South Sulawesi. Construction started end of June.

Activity 5.4: *Refit floating ranger station, recruit and train crew*

Results Anticipated in FY06:

- Floating ranger station operational by the end of FY06
- Crew recruited and trained

The floating ranger station is currently being built in South Sulawesi, with delivery in Raja Ampat expected in November 2006. The Raja Ampat field team is currently recruiting a crew, but this process is not yet completed due to the delayed delivery of the floating ranger station itself.

Activity 5.5: *Operate one speedboat*

Results Anticipated in FY06:

- One reliable speedboat operational to support the Raja Ampat program

A speedboat has been used to support the field activities of monitoring and outreach programs in Kofiau. Boat crew and field staffs have had training on the operation of the speedboat. In September 2006 a new speedboat will be put in service at the Misool site.



A speedboat named “Jou” has been using to support the field activities.